

IN THE CLAIMS:

1. (Currently Amended) A plurality of column electrode driving circuits in a matrix type display device including a plurality of row electrode driving circuits connected in series each for driving a plurality of row electrodes and the plurality of column electrode driving circuits connected in series each for driving a plurality of column electrodes,

each of the plurality of column electrode driving circuits comprising;
a data input section for receiving a control data signal for the plurality of column electrodes;

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a timing control section for generating a timing control signal for controlling at least one of the row electrode driving circuit and the column electrode driving circuit;

a selection section for selecting one of a signal in synchronization with the timing signal generated by the timing control section and the control data signal input to the data input section, based on the control data signal input to the data input section; and

a data output section for outputting one of the signal in synchronization with the timing signal and the control data signal which is selected by the selection section,

wherein the data input section of a second column electrode driving circuit of the plurality of column electrode driving circuits is connected to the data output section of a first column electrode driving circuit of the plurality of column electrode driving circuits, and the data output section of the second column electrode driving circuit is connected to the data input section of a third column electrode driving circuit of the plurality of column electrode driving circuits.

2. (Original) A plurality of column electrode driving circuits according to claim 1, wherein:

the data input section of the second column electrode driving circuit includes an external data input port for receiving an external control data signal and a transferred data input port for receiving a control data signal from the first column electrode driving circuit, the external data input port and the transferred data input port being switchable, and

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the timing control section of the second column electrode driving circuit is switchable to an operation state or a non-operation state in accordance with the switching between the external data input port and the transferred data input port.

3. (Original) A plurality of column electrode driving circuits according to claim 1, wherein:

the data input section of the second column electrode driving circuit receives one of the external data signal and the control data signal from the first column electrode driving circuit which is selectively input thereto, and

the timing control section of the second column electrode driving circuit is switchable to an operation state or a non-operation state by the external control data signal.

4. (Original) A display device, comprising:
a display panel;

a plurality of column electrode driving circuits according to claim 1 provided on the display panel; and

a plurality of row electrode driving circuits provided on the display panel,
wherein;

the plurality of column electrode driving circuits are connected in series along a first side of the display panel, so that a scanning signal from the first column electrode driving circuit, among the plurality of column electrode driving circuits, which is closest to the plurality of row electrode driving circuits, is transferred in a cascading manner in the plurality of column electrode driving circuits,

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the plurality of row electrode driving circuits are connected in series along a second side of the display panel adjacent to the first side, so that the scanning signal from the first column electrode driving circuit is transferred in a cascading manner in the plurality of row electrode driving circuits,

an external control data signal is input to the data input section of the first column electrode driving circuit and is output in synchronization with a timing signal generated by the timing control section of the first column electrode driving circuit,

the external control data signal which is output from the first column electrode driving circuit is transferred sequentially in the rest of the plurality of column electrode driving circuits in a cascading manner, and

the timing signal is transferred sequentially in the plurality of row electrode driving circuits in a cascading manner as the scanning signal.

5. (Currently Amended) A matrix type display device, comprising:

a display panel;

a plurality of column electrode driving circuits [[arranged in a line]] connected in series and provided along a first side of the display panel; and
a plurality of row electrode driving circuits [[arranged in a line]] connected in series and provided along a second side of the display panel, the second side being adjacent to the first side,

wherein;

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a control data signal for driving the display panel is input to a first column electrode driving circuits, among the plurality of column electrode driving circuits, which is closest to the plurality of row electrode driving circuits,

a timing signal for controlling an operation timing of the plurality of column electrode driving circuits and the plurality of row electrode driving circuits is generated in the first column electrode driving circuit, and the generated timing signal and a data signal are output to a second column electrode driving circuit, among the plurality of column electrode driving circuits, which is directly connected to the first column electrode driving circuit,

the output data signal is transferred to a third column electrode driving circuit, among the plurality of column electrode driving circuits, which is directly connected to the second column electrode driving circuit, and

the generated timing signal is transferred in a cascading manner to the plurality of row electrode driving circuits as a scanning signal.

6. (Currently Amended) A matrix type display device, comprising:

a display panel;
a plurality of column electrode driving circuits [[arranged in a line]] connected in series on a printed circuit board provided along a first side of the display panel; and
a plurality of row electrode driving circuits [[arranged in a line]] connected in series and provided along a second side of the display panel, the second side being adjacent to the first side,

wherein;

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each of the plurality of column electrode driving circuits is mounted in a tape carrier package;

a first column electrode driving circuit, among the plurality of column electrode driving circuits, which is closest to the plurality of row electrode driving circuits, generates a timing signal for controlling an operation timing of the plurality of column electrode driving circuits and the plurality of row electrode driving circuits, generates a timing signal for controlling an operation timing of the plurality of column electrode driving circuits and the plurality of row electrode driving circuits, and outputs the generated timing signal to a first row electrode driving circuit, among the plurality of row electrode driving circuits, which is closest to the first column electrode driving circuit as a scanning signal,

a timing signal which is output from the first column electrode driving circuit is supplied to the first row electrode driving circuit sequentially through a first line portion provided on the tape carrier package mounting the first column electrode driving circuit, a second line portion provided on the printed circuit board, a third line

portion provided on the tape courier package mounting the first column electrode driving circuit, and a fourth line portion provided on the display panel.

7. (Currently Amended) A matrix type display device, comprising:

a display panel

a plurality of column electrode driving circuits [[arranged in a line]] connected in series on a printed circuit board provided along a first side of the display panel; and a plurality of row electrode driving circuits [[arranged in a line]] connected in series and provided along a second side of the display panel, the second side being adjacent to the first side,

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wherein a timing signal for controlling the plurality of row electrode driving circuits is supplied to one of the plurality of row electrode driving circuits sequentially through a second line portion provided on the printed circuit board, a third line portion provided on one of the plurality of column electrode driving circuits, and a fourth line portion provided on the display panel.

8. (Currently Amended) A matrix type display device, comprising

a display panel;

a plurality of column electrode driving circuits [[arranged in a line]] connected in series on a circuit board provided along a first side of the display panel; and a plurality of row electrode driving circuits [[arranged in a line]] connected in series and provided along a second side of the display panel, the second side being adjacent to the first side,

wherein;

a first column electrode driving circuit, among the plurality of column electrode driving circuits, which is closest to the plurality of row electrode driving circuits, generates a timing signal for controlling an operation timing of the plurality of column electrode driving circuits and the plurality of row electrode driving circuits, and outputs the generated timing signal to a first row electrode driving circuit, among the plurality of row electrode driving circuits, which is closest to the first column electrode driving circuit as a scanning signal,

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a signal circuit is provided to use for signals being different from a timing signal which is output from the first column electrode driving circuit; and

the timing signal which is output from the first column electrode driving circuit is supplied to the first row electrode driving circuit sequentially through the circuit board as not to be cross with the signal circuit.